



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,623	12/06/2001	Malcolm R. Schuler	90065.161701	3753

7590

09/28/2005

Thomas R. FitzGerald , Attorney  
Reynolds Arcade Bldg  
Suite 210 16 E Main Street  
Rochester, NY 14614-1803

EXAMINER

MARKOFF, ALEXANDER

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/008,623

Applicant(s)

SCHULER ET AL

Examiner

Alexander Markoff

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 7/29/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13, 14 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 14 and 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The applicants amended the claims to remove some limitations. Previously applied rejections over Stanasolovich et al reinstated and applied to all pending claims.

### ***Response to Declaration and Information Request***

2. The Declaration filed on 7/29/05 under 37 CFR 1.131 has been considered but is ineffective to overcome the Kobayashi et al reference.

The Declaration relies on page 1, section 1 of paper of Robert F. Logenberger filed as Exhibit #1. The provided evidence is not commensurate in scope with pending claims. The evidence does not provide relations between transducers, directions of the waves and orientations and movements of the wafers.

3. Further, additional information regarding "original patent" and the system manufactured by Fluorocarbon (referenced in first paragraph on page 1 of the Exhibit #1) is requested to support the statements made in the Declaration.
4. It is noted that the Declaration signed by Mr. Longenberger states that "I/we conceived and reduced to practice the invention disclosed in the subject application". At the same time, Exhibit #1 states that the described experiments were conducted by the Mountaintop Clean Team. No information regarding who is referenced as the Team is provided. There is no information provided regarding whether the Team included the applicants. Thereby, it is not clear whether Exhibit #1 describes a work of applicants or other people. This raises a question regarding inventorship of the instant application.

Art Unit: 1746

5. It is further noted that it is not clear from Exhibit #1 whether the referenced experiments were inventive modification of the known system (referenced as "initial work by Mayer and Schwartzman" and as "the original patent") or a mere comparison of different conventional modes of operation of the known system.

6. It is further noted that newly discovered patents issued to Mayer and Schwartzman (Schwartzman) are applied to most of the pending claims in the rejections made under 35 USC 102 (b).

7. In view of all of the above the applicants are requested to clarify the issues and provide information regarding what is referenced as "initial work by Mayer and Schwartzman", "the system manufactured by Fluorocarbon" and "the original patent" and who is referenced as "the Mountaintop Clean Team".

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 13, 14 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Stanosolovich et al (US Patent No 5,533,540).

Stanosolovich et al teach a method as claimed as conventional and known in the art. See at least Figure 1 and the related description.

Art Unit: 1746

10. Claims 13, 14, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Mayer and Schwartzman (Shwartzman) (any one of US Patents No 3,893,869 and 4,118,649).

Mayer and Schwartzman (Shwartzman) teach a method as claimed. See at least column 1, lines 35-56 of '649 and Figures 1, 2 and column 4, lines 24-48.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1746

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 13-14 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (US Patent No 6,085,764) in view of Handbook of Semiconductor Wafer Cleaning Technology (HSWCT).

Kobayashi et al teaches a method as claimed except for generating of two sets of waves and the use of megasonic frequency. See entire document, especially Fig. 1 and Description of the Preferred Embodiment. The movement of the wafers in Kobayashi et al is the same as the movement of the wafers shown on Figs. 1 and 2 of the instant application.

Kobayashi et al teach the use of ultrasonic cavitation for cleaning.

The HSWCT teaches (page 141) that ultrasonic cavitation can cause a surface damage. The document recommends the use of megasonic waves produced by arrays of megasonic transducers to avoid the surface damage.

It would have been obvious to an ordinary artisan at the time the invention was made to use an array of megasonic transducers instead of the ultrasonic vibrator 12 in the method of Kobayashi et al in order to prevent damage from ultrasonic cavitation with reasonable expectation of success because the HSWCT recommends that.

***Response to Arguments***

5. Applicant's arguments filed 6/27/05 have been fully considered but they are not persuasive. The applicants rely on the Declaration filed 7/29/05 to overcome the rejection over Kabayashi et al. However, the Declaration is not sufficient to overcome the rejection. See the detailed explanation above.

6. In view of the amendments filed on 6/27/05 the previously applied rejection over Stanasolovich et al was reinstated and applied to all claims.

7. Newly discovered patents issued to Mayer and Schwartzman (Shwartzman) are applied to reject claims under 35 USC 102 (b).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Markoff whose telephone number is 571-272-1304. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexander Markoff  
Primary Examiner  
Art Unit 1746

AM

ALEXANDER MARKOFF  
PRIMARY EXAMINER